



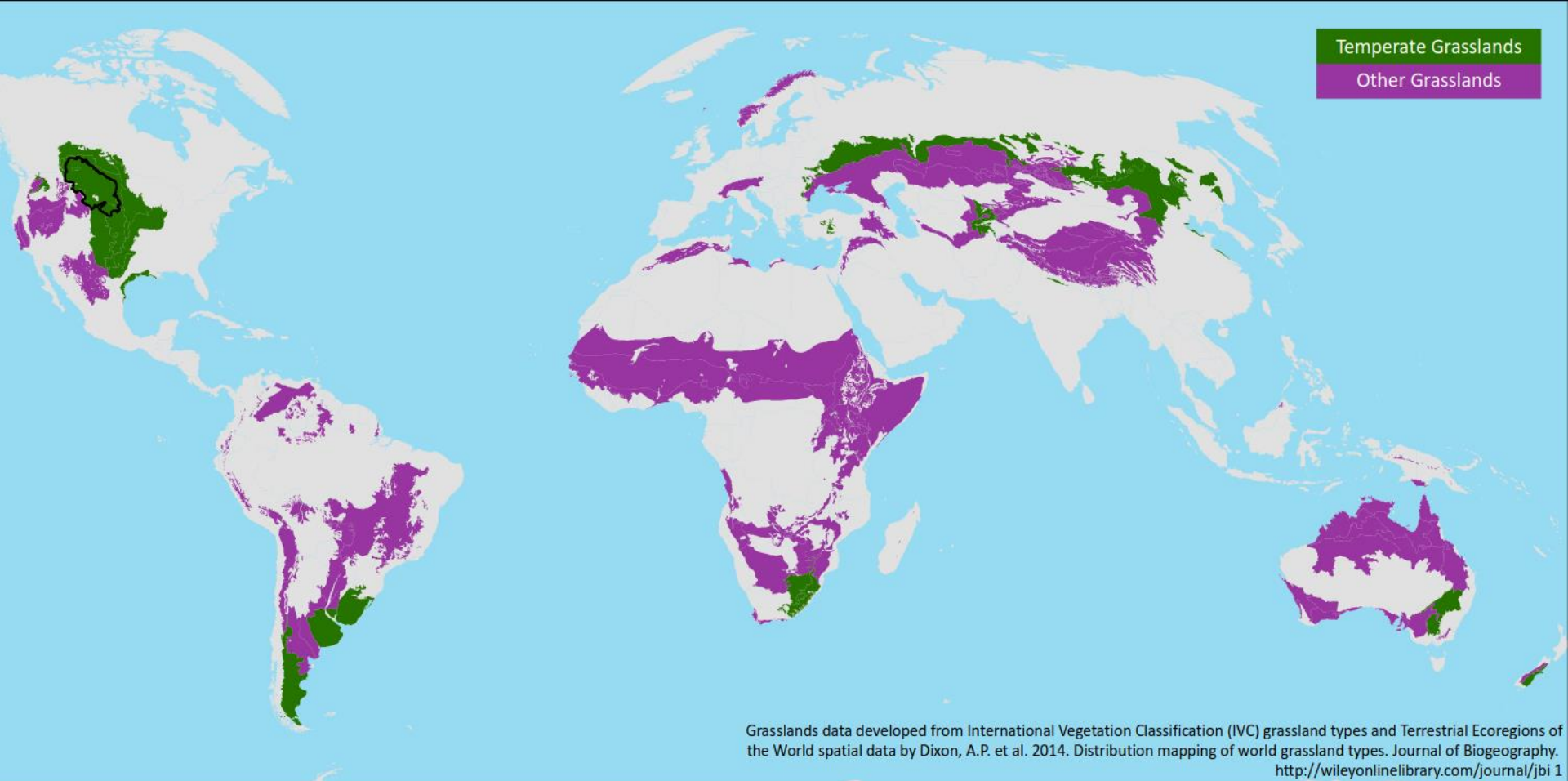
© Thomas Lee / WWF-US

Conservation & the Future of the Great Plains

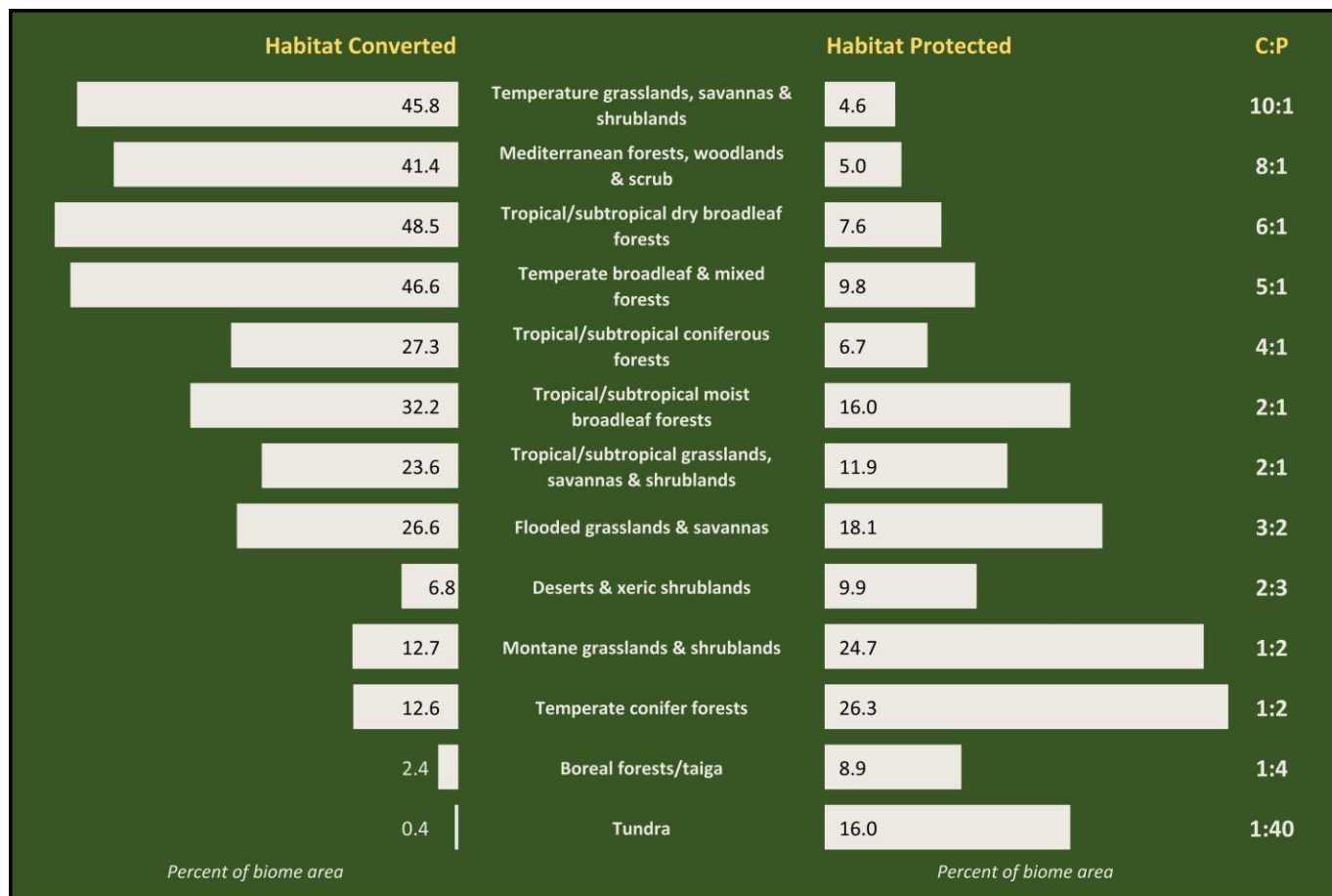
Plains Safaris Conference
Kearney, NE
April 19, 2018

Martha Kauffman
WWF Northern Great Plains
Program



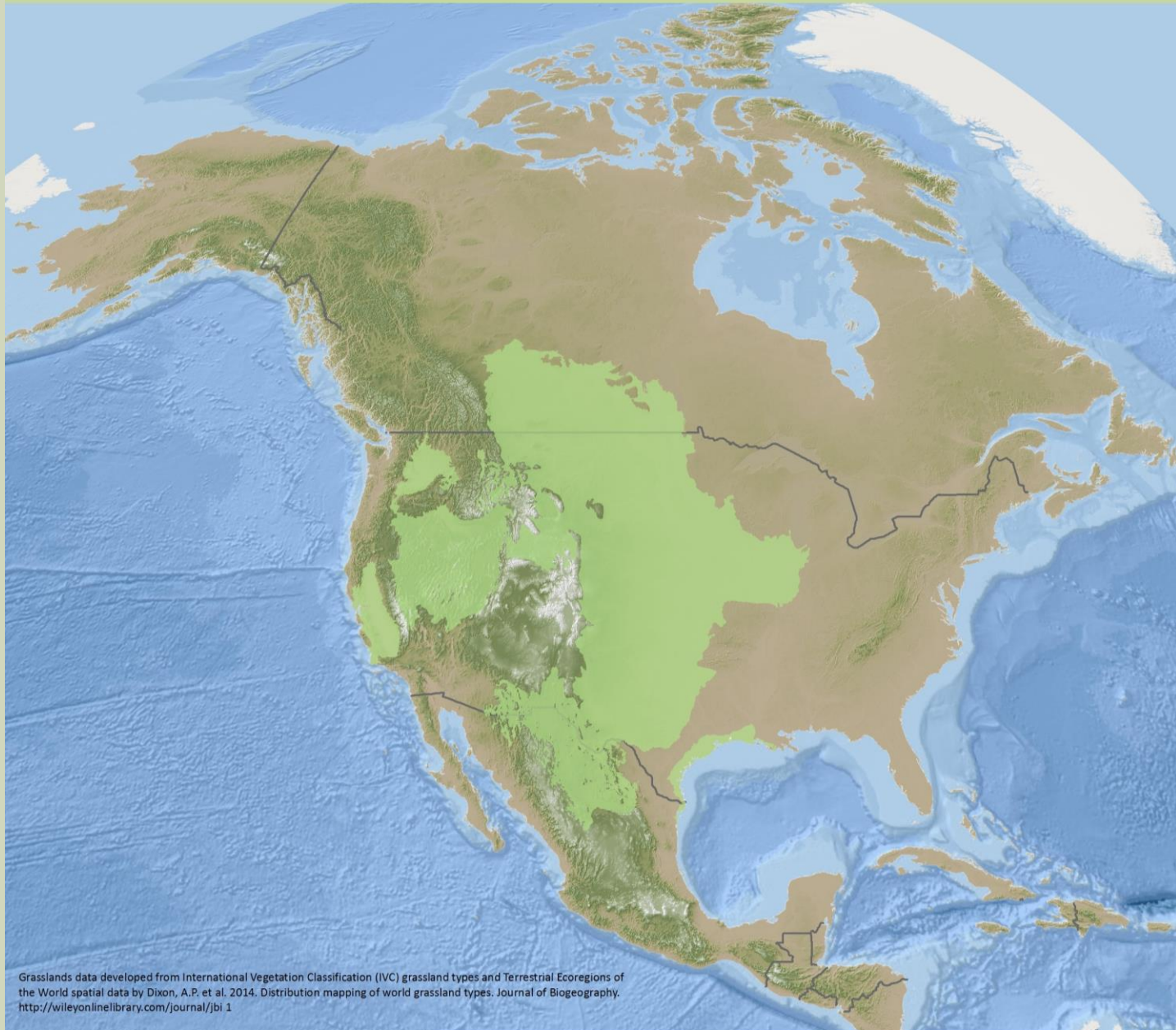


Map of global grasslands



Most threatened biome

NORTH AMERICAN GRASSLANDS

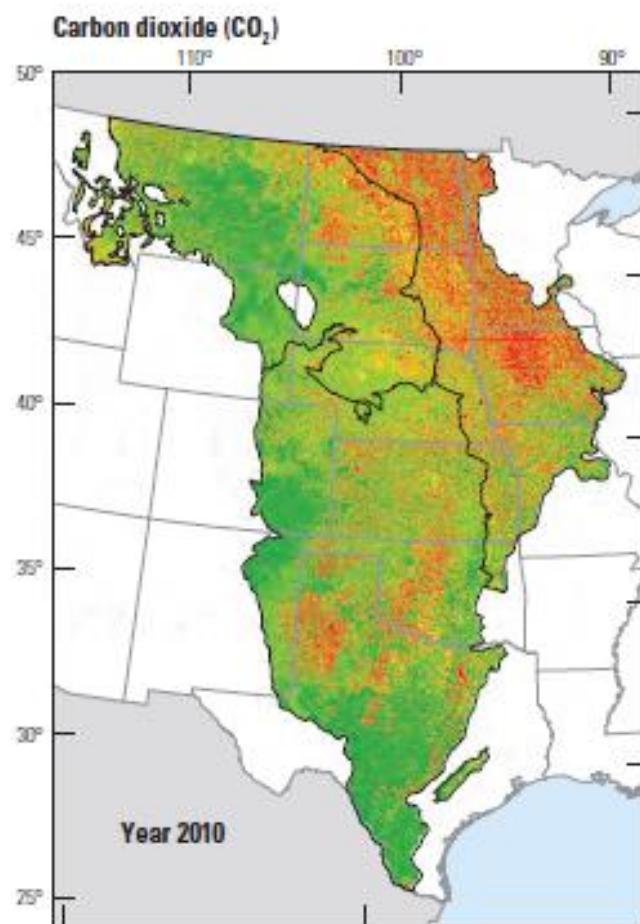


Great Plains & NGP



© WWF-US / Sarah Olimb

183 million ac (74 million has) across 5 states and 2 provinces



EXPLANATION

(Maps)

Emissions in 2010, in grams of carbon-dioxide equivalent per square meter per year



— Level II ecoregion boundary

Carbon Emissions



Shutterstock

Clean water

















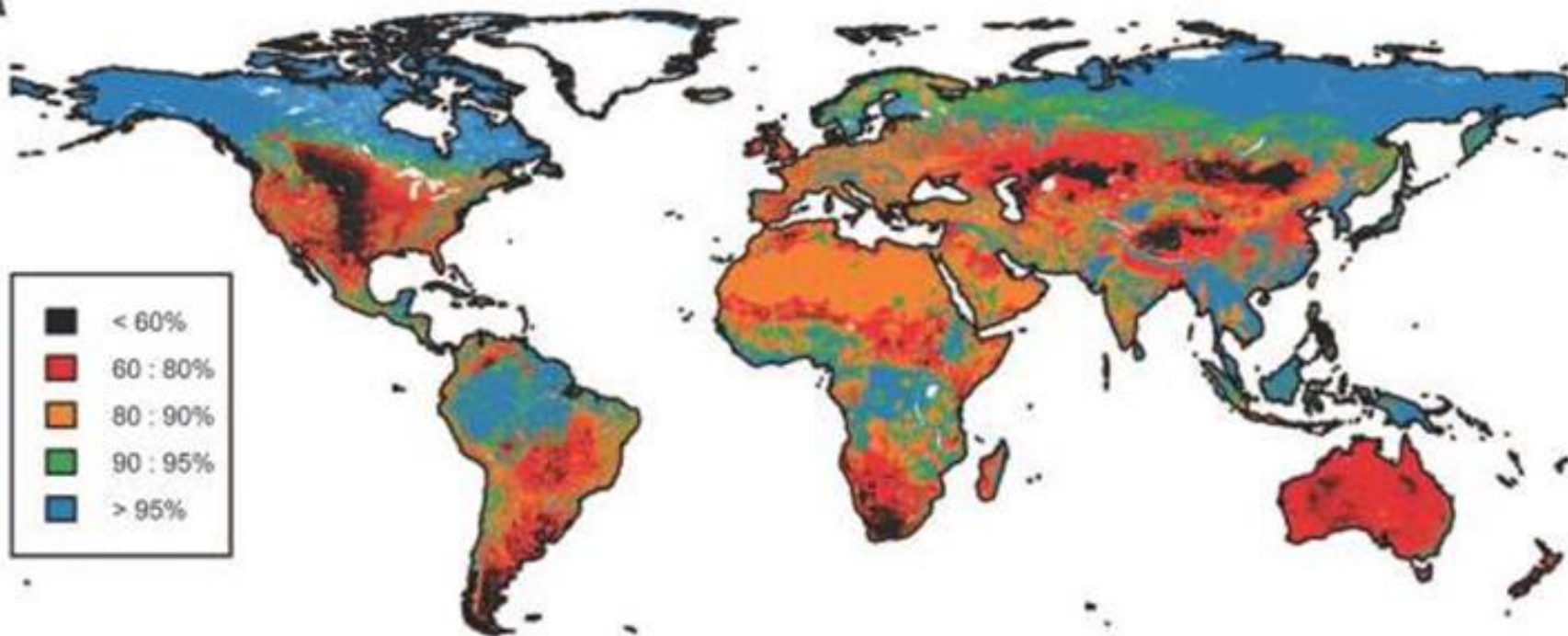






Recreation

A



Abundance of Native Species Remaining



Energy



© WWFUS/Clay Bolt



© Frank PARHIZGAR / WWF-Canada



© Day's Edge / WWF-US




© Day's Edge / WWF-US


Food & Fuel


NA Grassland loss 2000-2016


Grassland/shrubland/wetland loss
(% loss of total county/municipality area)

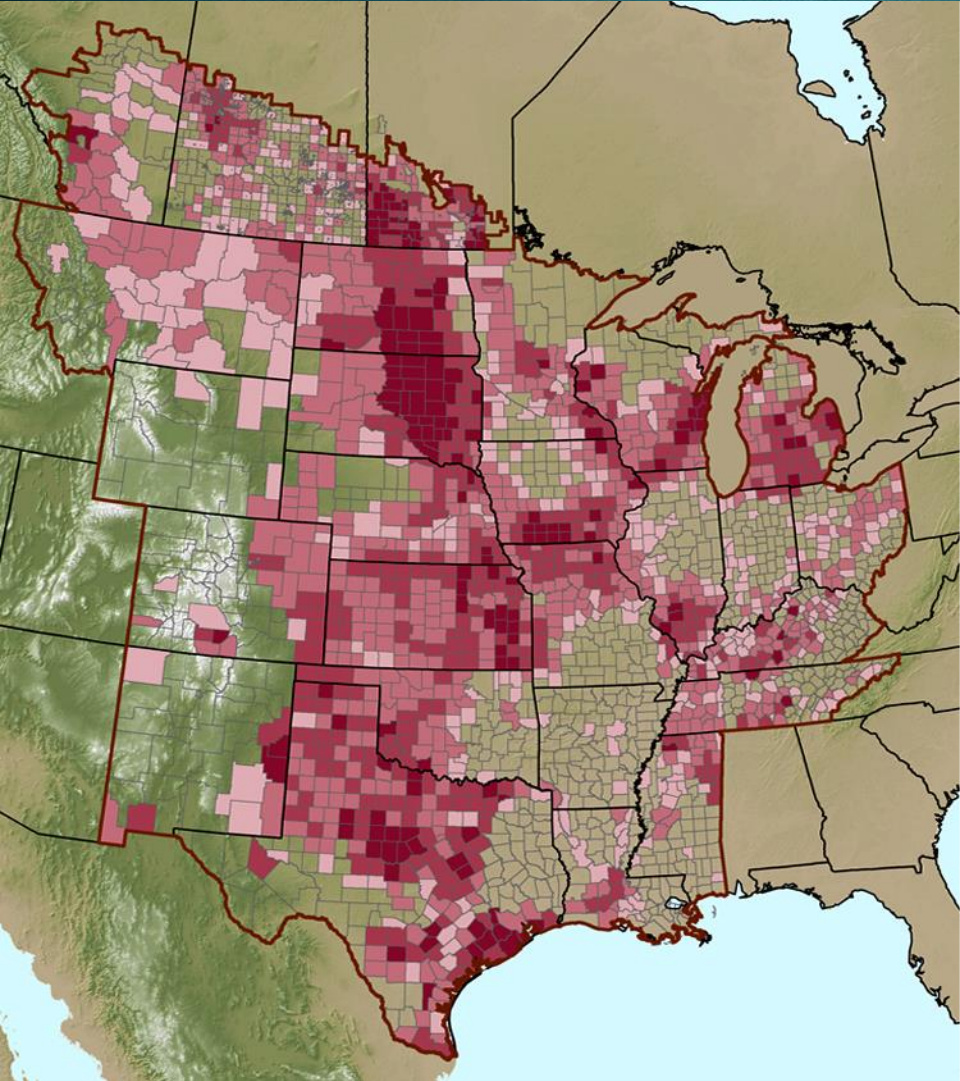
 < 3%

 3% – 5%

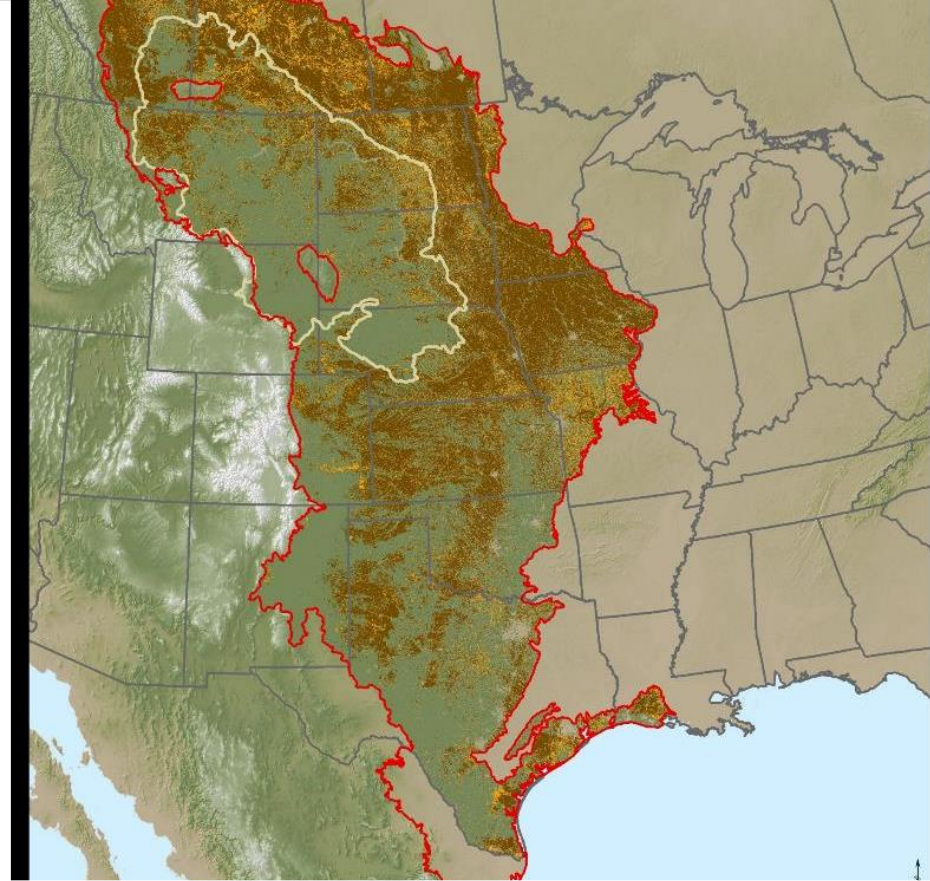
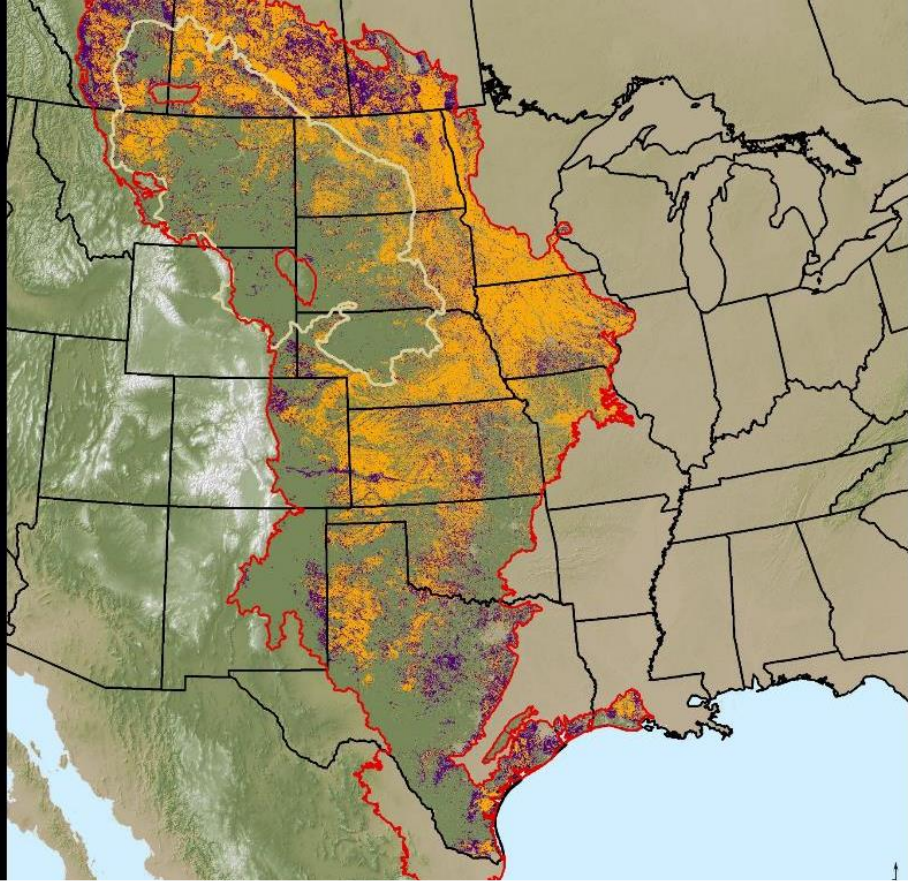
 5% – 10%

 10% – 15%

 > 15%



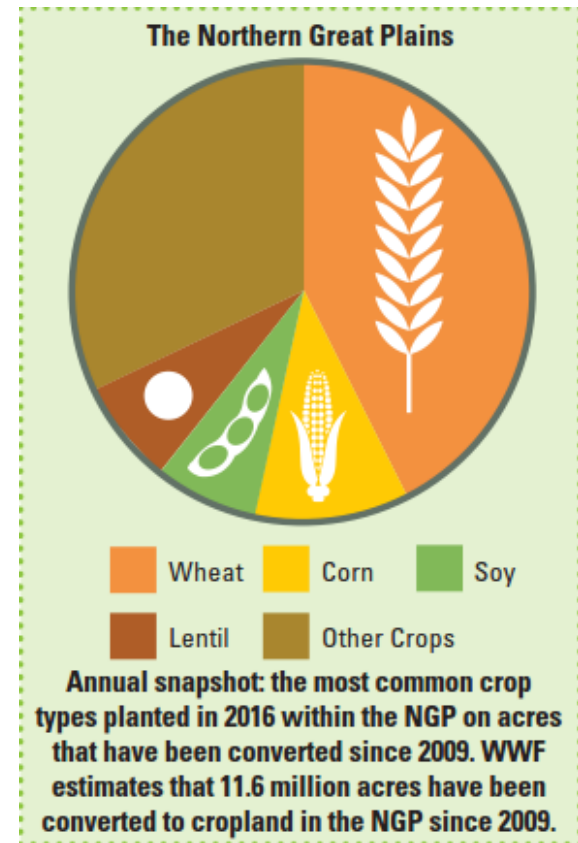
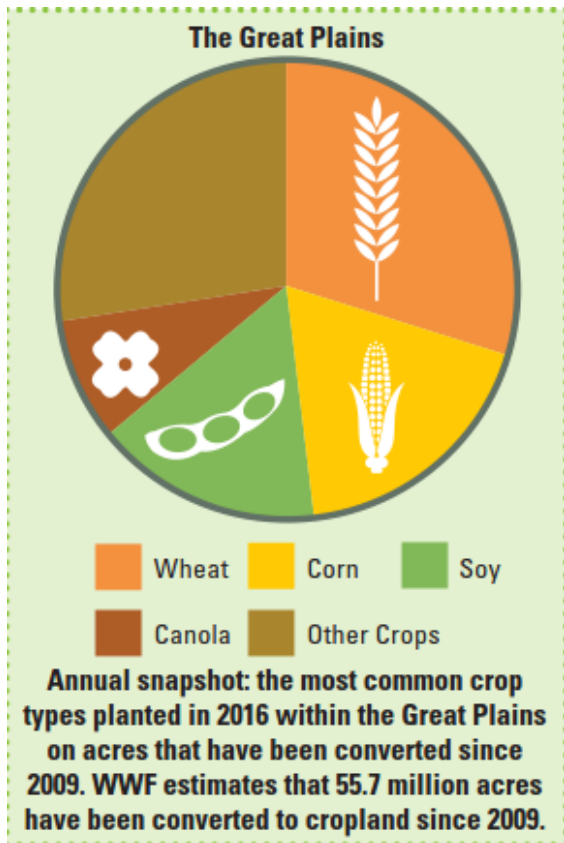
Source: Sarah Olimb, WWF Northern Great Plains
Data: 2016 WWF Plowprint, 2001 National Land Cover Dataset (USGS),
2000 Land Cover of Canada (Natural Resources Canada)



Plowprint 2016

2.5 million acres plowed in 1 year

www.Plowprint.org



Crops in Plowprint - 2016

Carbon emissions due to plow-up 2011-2016

1,235,568,474 Metric tons CO₂e
Equivalent to CO₂ emissions

306



coal-fired
power plants
in one year

133,416,313



homes' energy
use for one
year

264,575,690



Passenger
vehicles driven
for one year

Carbon emissions due to plow-up of the Great Plains, 2011-2016

1,419,981,679 Metric tons CO₂e

Equivalent to CO₂ emissions



Ocean Dead Zone

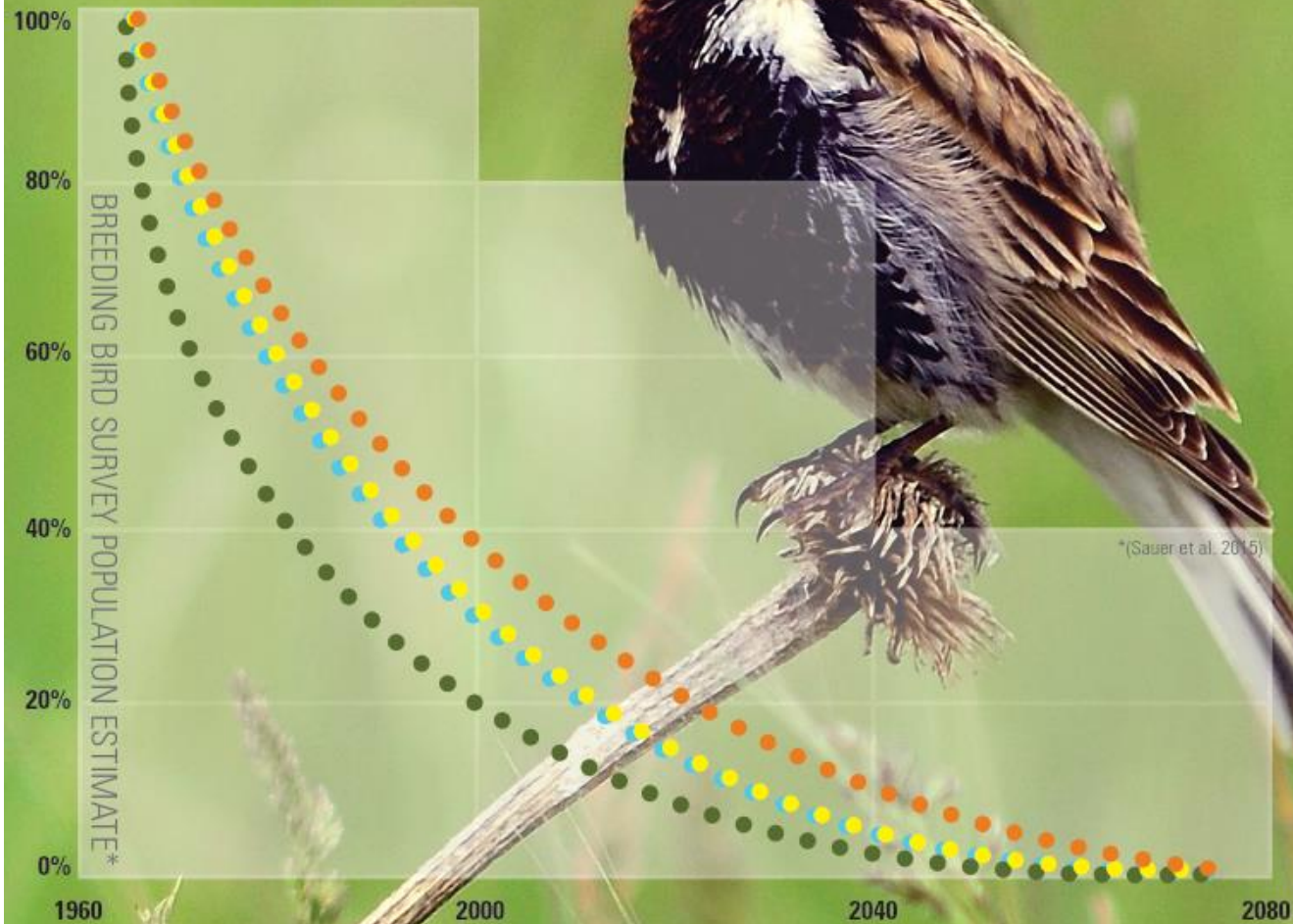
6000 square mile area
of the Gulf of Mexico
where sea life can't
survive



Grassland Bird decline

Most Affected Species:

- McCown's Longspur, -6.2% per year
- Chestnut-collared Longspur, -4.4% per year
- Lark Bunting, -4.1% per year
- Sprague's Pipit, -3.5% per year



Several species
have experienced
declines of 80%
since 1960



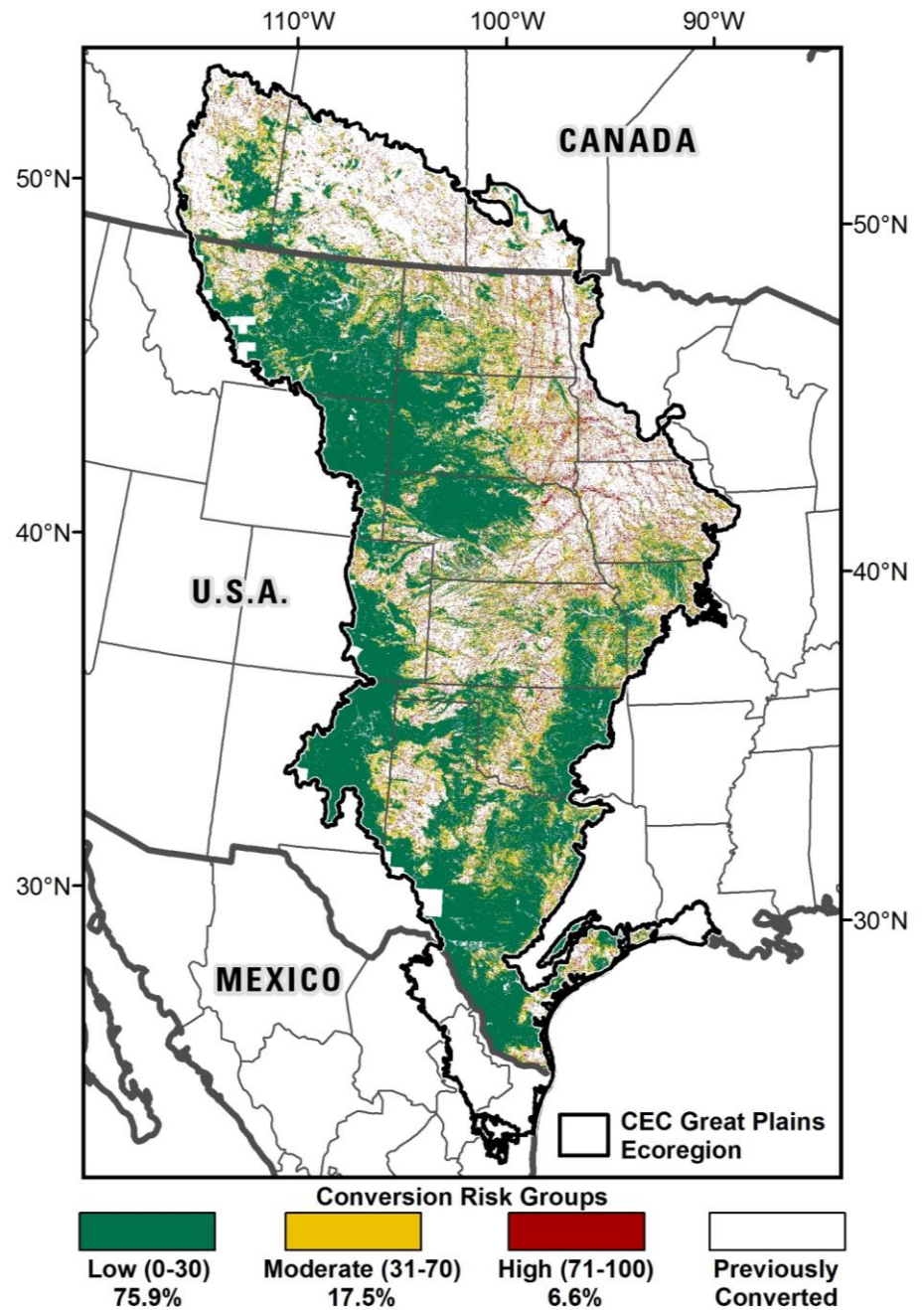
The Great Plains is home to hundreds of native pollinator species. 1 out of 4 species of bumble bee—vital members of this community due to the range of plants that they visit—are at risk of extinction.

Habitat loss is playing a major role in their decline.

© WWFUS/Clay Bolt

Pollinators

Conversion Risk



News



World population projected to reach 9.8 billion in 2050, and 11.2 billion in 2100

21 June 2017, New York

www.bbc.com/news/world-asia-india-43581122

The myth of the Indian vegetarian nation



Soutik Biswas
India correspondent

4 April 2018

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The majority of Indians are meat-eaters

DEMAND IS GROWING

Crops are shifting

Northern Plains: Wheat Acres Shift to Corn and Soybeans Due to Climate Change

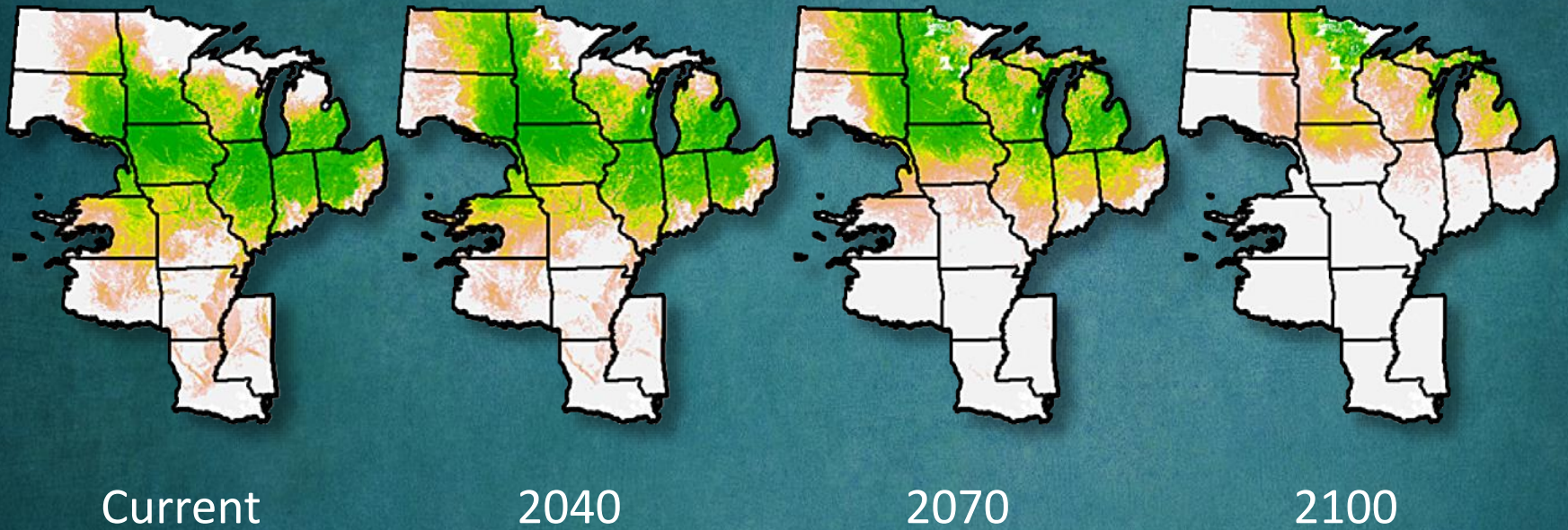


Posted by Rachel Steele, USDA National Climate Hubs Coordinator
May 4, 2015





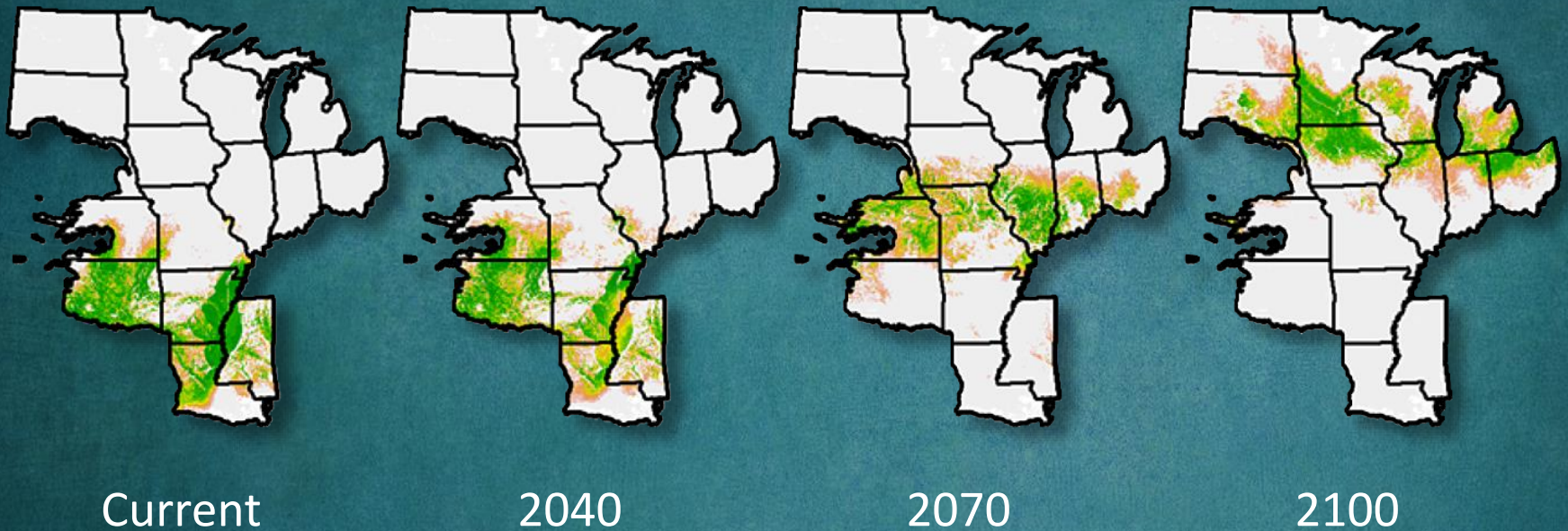
US Midwest land & climate suitability for corn production, 2010-2100



Source: "The Effect Of Climate Change On Rural Land Cover Patterns In The Central United States", Christopher Lant, Timothy J. Stoeber, Justin T. Schoof, Benjamin Crabb, 2015



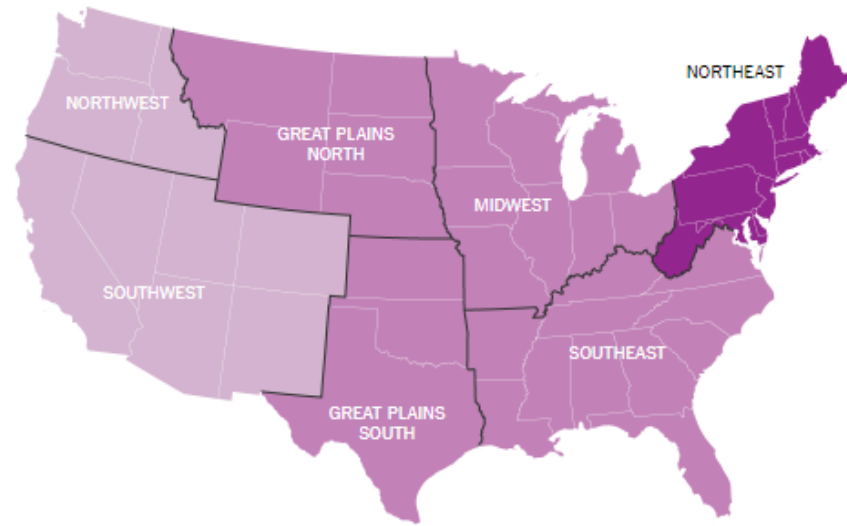
US Midwest land & climate suitability for cotton production, 2010-2100



Source: "The Effect Of Climate Change On Rural Land Cover Patterns In The Central United States", Christopher Lant, Timothy J. Stoeber, Justin T. Schoof, Benjamin Crabb, 2015

How maximum daily precipitation has changed, 1901-2016

■ +0-9% ■ +10-19% ■ +20-29%



How average annual temperatures have changed

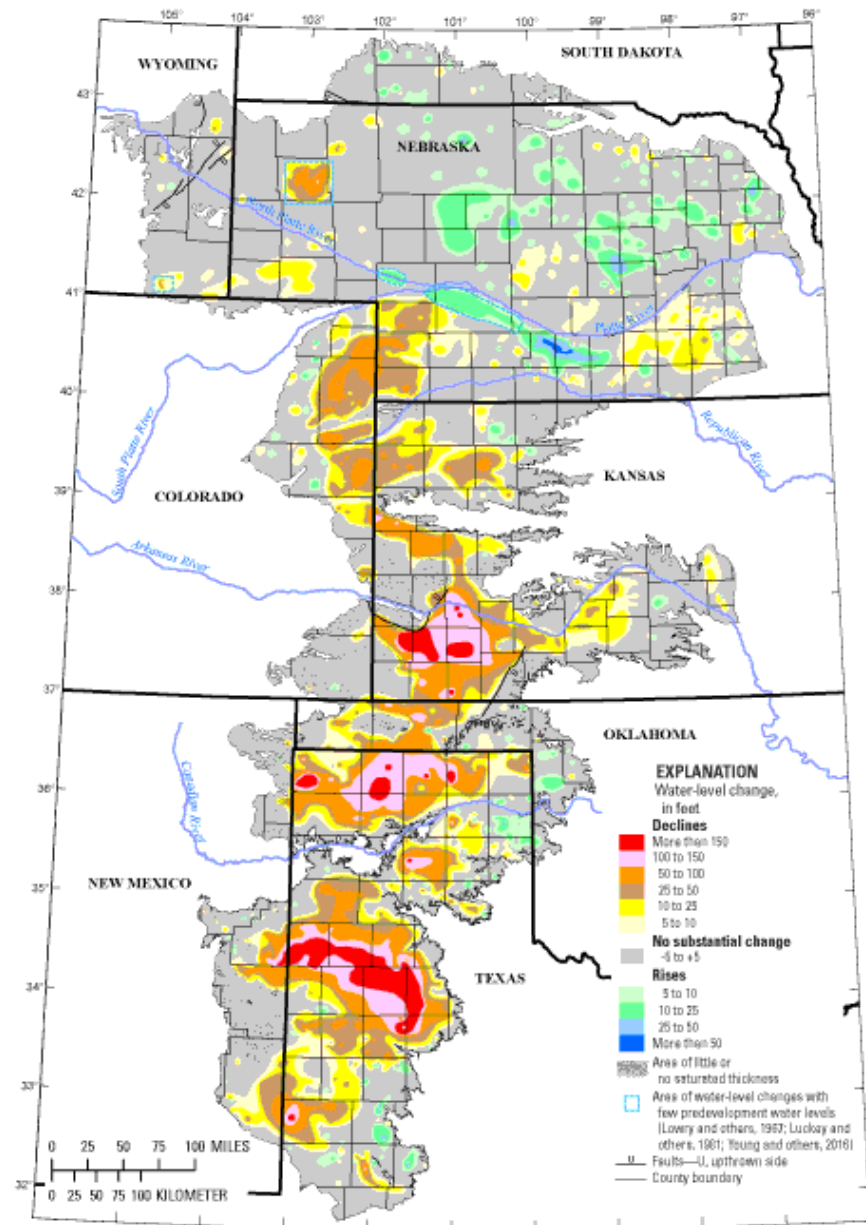
Since the first half of the 20th century

	Average annual temperature	Average annual minimum	Average annual maximum
Great Plains North	1.7	1.7	1.7
Alaska	1.7	1.9	1.4
Southwest	1.6	1.6	1.6
Northwest	1.5	1.6	1.5
Northeast	1.4	1.7	1.2
Hawaii	1.3	1.5	1.0
Midwest	1.3	1.8	0.8
United States	+1.2°F	+1.4°F	+1.1°F
Great Plains South	0.8	1.0	0.6
Southeast	0.5	0.8	0.2

Source: <https://www.nytimes.com/interactive/2017/08/08/climate/nine-takeaways-climate-report.html> https://science2017.globalchange.gov/downloads/CSSR2017_FullReport.pdf

Climate is changing

Ogallala Aquifer



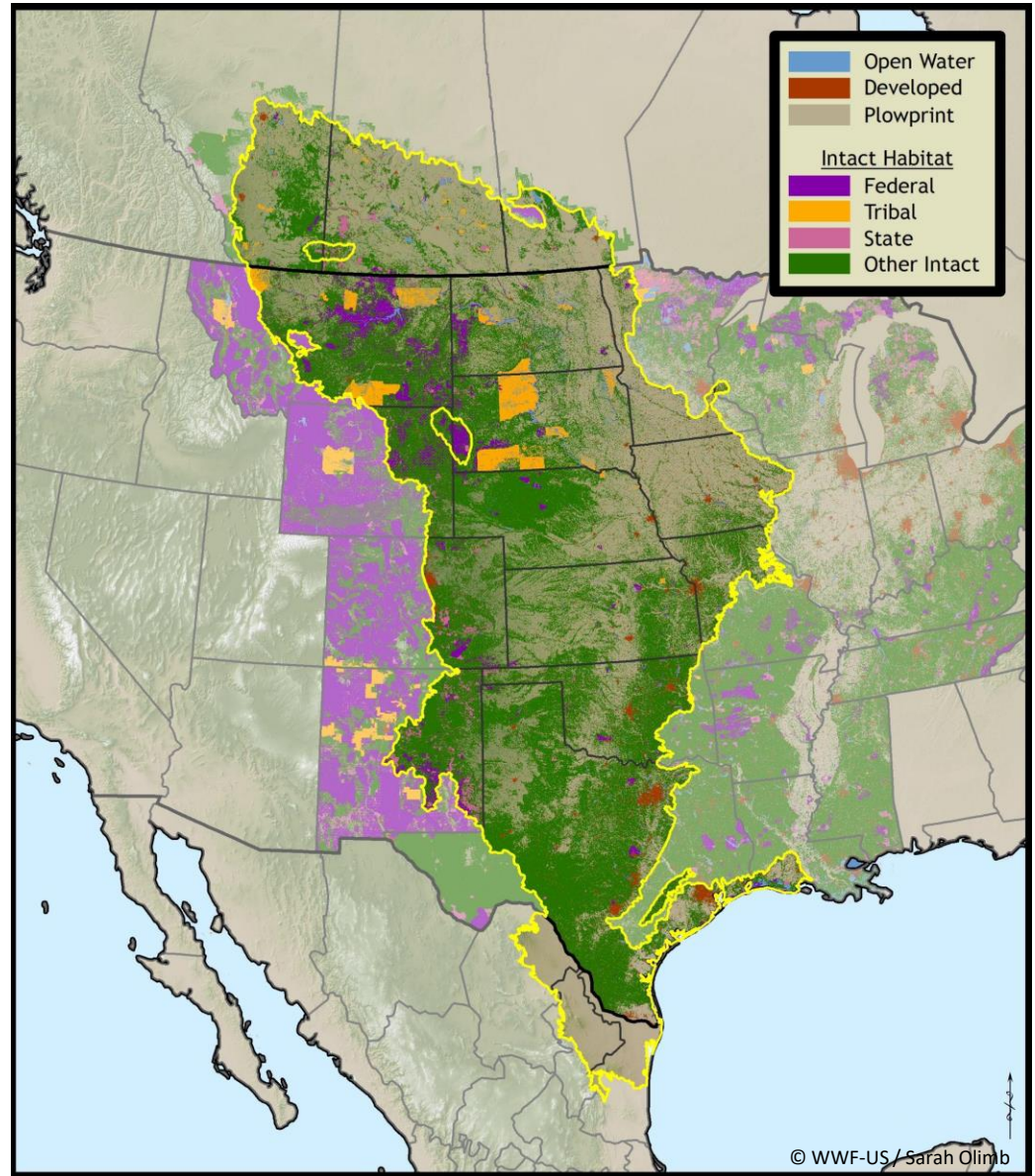
High Plains aquifer water-level changes, predevelopment (about 1950) to 2015.

Figure 1 from [USGS SIR 2017-5040](https://pubs.usgs.gov/sir/2017/5040/)



How do we protect what's left?

NGP Grassland Ownership





All Photos © Day's Edge / WWF-US

Future is in the hands of landowners



© Day's Edge / WWF-US



© WWF / Troy Fleece



© Day's Edge / WWF-US



© WWF-US/Clay Bolt

Letter to genZ: our land is our planet, don't forget it



A LETTER TO MY GENERATION



<https://www.worldwildlife.org/videos/letter-to-genz-our-land-is-our-planet-don-t-forget-it>

ECONOMICS HAVE TO WORK



CENTER FOR GREAT PLAINS STUDIES

Nebraska

Center for Great Plains Studies

Great Plains Projects

Ecotourism



ABOUT US

FOR STUDENTS

ART MUSEUM

GREAT PLAINS
PROJECTS

PUBLICATIONS

EVENTS & SYMPOSIA

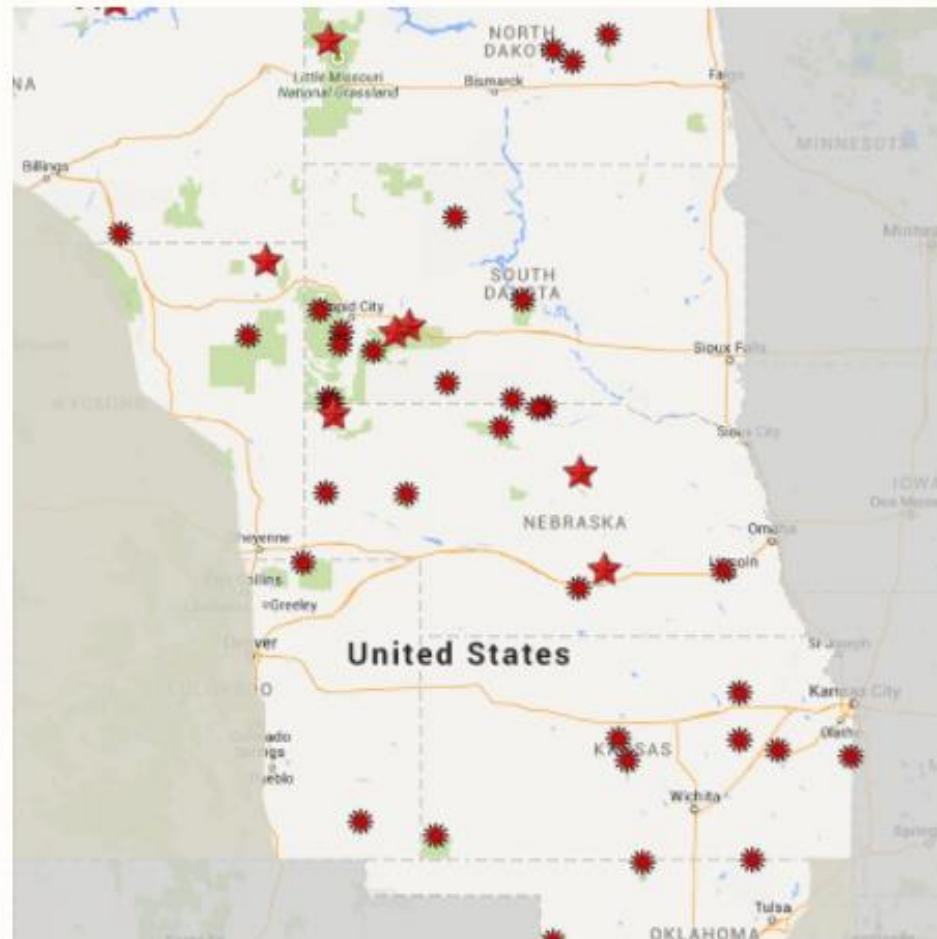


ECOTOURISM

Welcome to the Great Plains! One of the Center's biggest projects is ecotourism. Often disparaged as "fly-over" country, the

EMAIL US

Top 50 Ecotourism Sites Map



<https://www.unl.edu/plains/ecotourism>

Tourism assessment tribal lands



Proposal for Services

Assessment of Sustainable Tourism Opportunities for Tribes in the Northern Great Plains

Revised on January 12, 2018



Assessment of Sustainable Tourism Opportunities
Northern Great Plains





Innovation



GROWING A REVOLUTION

BRINGING OUR SOIL BACK TO LIFE

DAVID R. MONTGOMERY

coauthor of *The Hidden Half of Nature*



HOW SCIENTISTS, FARMERS, AND
FOODIES ARE HEALING THE SOIL
TO SAVE THE PLANET

the soil
will save us

KRISTIN OHLSON

Noble Research Institute launches Land Stewardship Program

Posted Feb. 9, 2018

Measuring: ecological efficiency, production efficiency, soil resource management and water resource management.

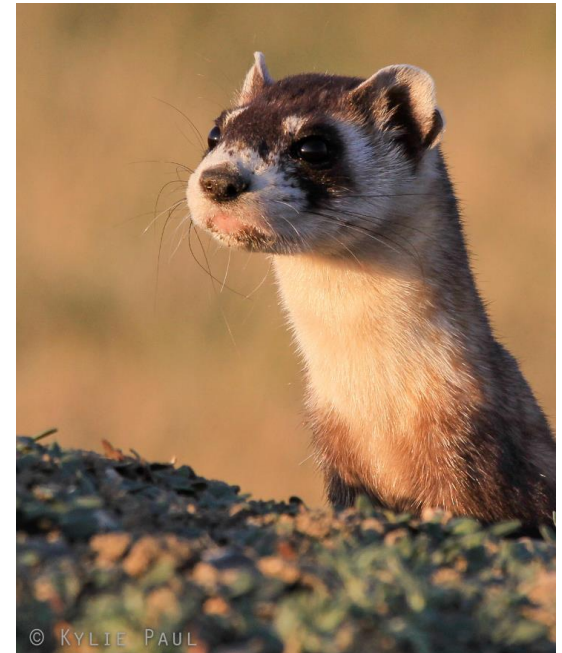
The ultimate goal is the creation of a market where land stewards receive performance-based economic benefit for measured ecological outcomes.



Beef

US Roundtable for Sustainable Beef Membership





Innovation

Collaboration



© WWF-US / Jeff Nelson



Keeping TRADITION Alive ...
Ranching for the FUTURE



CMR Community Working Group

80/20 rule



Bold & Unified Action

23 Global Food Companies Commit to Preserve Brazil's Cerrado Savanna

Conservationists welcome move as Cerrado is cleared faster than Amazon

DATE

October 25, 2017

MEDIA CONTACT

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202-495-4133

susan.mccarthy@wwfus.org

IN THIS PRESS RELEASE

Cerrado

Food



What if we all came
together and created...



© Thomas Lee / WWF-US

A Declaration for the
Great Plains

Governments (national,
state)

Tribes

Companies

Tourism associations

Trade groups

Universities

NGOs



WWF